EXHIBIT 2

Amendments to the Claims

Please make the following amendments to the Claims:

1.   (Currently Amended) An apparatus for machine learning results, the apparatus

comprising:

a predictive compiler module configured to generate machine learning comprising

program code for a plurality of learned functions, the program code generated

by the predictive compiler module to predict one or more machine learning

results based on one or more machine learning parameters;

an input module configured to receive user input identifying one or more values for

the one or more machine learning parameters;

a pre-compute module configured to predetermine, using the generated machine

learning, permutations of the machine learning results at one or more

increments between a minimum value and a maximum value for the one or

more machine learning parameters, prior to the input module receiving the

user input;

a display module configured to display, from the pre-compute module, a first

predetermined permutation of the one or more predicted machine learning

results for the one or more identified machine learning parameters, the one or

more machine learning results determined using machine learning; and

an update module configured to dynamically ~~update the displayed~~ <u>display, from the</u>

<u>pre-compute module, a second permutation of the</u> one or more machine

learning results in response to the input module receiving additional user

input identifying one or more additional values for the one or more machine

learning parameters<u>,</u>

<u>wherein the predictive compiler module, the input module, the pre-compute module,</u>

<u>the display module, and the update module comprise one or more of logic</u>

<u>hardware and a non-transitory computer readable storage medium storing</u>

<u>program code executable by a processor.</u>

2.   (Cancelled)

3.   (Currently Amended) The apparatus of claim [[2]] <u>1</u>, wherein the pre-compute module is

configured to cache the predetermined permutations of the machine learning results for

the update module in a results data structure indexed by the one or more machine learning

parameters.

4.   (Currently Amended) The apparatus of claim 3, wherein the ~~pre-compute~~ <u>update</u> module

is configured to determine the <u>second permutation of the one or more</u> machine learning

results by looking up the <u>second permutation of the one or more</u> machine learning results

in the results data structure using <u>the one or more additional values for</u> the one or more

machine learning parameters.

5.   (Original) The apparatus of claim 1, wherein the display module is configured to display one or more attributes of a data set used by the machine learning to determine the one or more machine learning results and one or more impact metrics for each displayed attribute.

6.   (Currently Amended) The apparatus of claim 1, ~~further comprising a predictive compiler module configured to generate the machine learning, the machine learning comprising program code for a~~ wherein the plurality of learned functions are from multiple machine learning classes~~, the program code generated by the predictive compiler module to predict the machine learning results based on the one or more machine learning parameters~~.

7.   (Original) The apparatus of claim 1, further comprising a recommendation module configured to select a suggested set of machine learning results, the display module configured to display the suggested set of machine learning results to the user prior to the input module receiving the user input.

8.   (Currently Amended) The apparatus of claim 1, wherein the one or more machine learning parameters comprise one or more of an input and an output of the machine learning adjusted by the user input and the machine learning results comprise one or more of an input and an output of the machine learning determined based on the ~~adjusted~~ one or more machine learning parameters.

9.   (Original) The apparatus of claim 1, wherein the one or more machine learning

parameters comprise one or more of an attribute of a feature, a target value for a goal, an

action relating to a goal, a confidence metric, and a target of an action.

10.   (Original) The apparatus of claim 1, wherein the machine learning results comprise one

or more of an attribute of a feature, a target value for a goal, an action relating to a goal, a

confidence metric, and a target of an action.

11.   (Original) The apparatus of claim 1, wherein the input module is configured to receive the

user input as an adjustment to a slider graphical user interface element corresponding to

the one or more machine learning parameters.

12.   (Original) The apparatus of claim 1, wherein the input module is configured to receive the

user input as a user entry in a graphical table and the display module is configured to

display the one or more machine learning results as entries in the graphical table.

13.   (Original) The apparatus of claim 1, wherein the input module is configured to receive the

user input as a user manipulation of a displayed object.

14.   (Original) The apparatus of claim 13, wherein the user input comprises one or more of:

an adjustment to a size of the displayed object;

an adjustment to a vertical position of the displayed object;

an adjustment to a horizontal position of the displayed object;

an adjustment to an opacity of the displayed object;

an adjustment to a color of the displayed object;

an adjustment to a shape of the displayed object;

an adjustment to shading of the displayed object;

a text entry in a text box for the displayed object; and

user interaction with an animation for the displayed object.

15.   (Original) The apparatus of claim 1, further comprising a collaboration module configured to determine an impact on the one or more machine learning results based on different user input received from a different user.

16.   (Original) The apparatus of claim 15, wherein the input module is configured to receive the different user input from the different user, the different user input identifying a different value for a different machine learning parameter, the display module configured to display multiple sets of one or more machine learning results to multiple users, and the update module configured to dynamically update the displayed multiple sets of one or more machine learning results.

17.   (Currently Amended) A method for machine learning results, the method comprising:

generating a predictive program comprising a plurality of learned functions from

multiple machine learning classes;

inputting permutations of machine learning parameters incrementally between

minimum values for the machine learning parameters and maximum values

for the machine learning parameters into [[a]] the predictive program;

determining machine learning results from the predictive program for the input

permutations of the machine learning parameters; [[and]]

populating a results data structure with the determined machine learning results

indexed by the machine learning parameters;

dynamically changing a display of one or more input permutations of the machine

learning parameters from the results data structure in response to user input

adjusting a displayed value for one or more of the machine learning results

from the predictive program.

18.   (Original) The method of claim 17, wherein the results data structure is populated prior to

receiving user input identifying a value for a machine learning parameter.

19.   (Currently Amended) The method of claim 17, further comprising dynamically changing

a display[[ing]] of one or more of the corresponding machine learning parameters and

machine learning results from the results data structure in response to user input selecting

a value for one or more of a machine learning parameter and a machine learning result.

20.   (Currently Amended) The method of claim [[19]] 17, further comprising ~~dynamically~~

~~changing the displayed one or more corresponding machine learning parameters and~~

~~machine learning results using the results data structure in response to user input~~

~~adjusting a value for a machine learning parameter~~ determining, from the results data

structure, an impact on machine learning results from a different predictive program

caused by the user input adjusting the displayed value for the one or more of the machine

learning results.

21.   (Currently Amended) The method of claim [[19]] 20, further comprising: ~~dynamically~~

~~changing the displayed one or more corresponding machine learning parameters and~~

~~machine learning results using the results data structure in response to user input~~

~~adjusting a value for a machine learning result~~ displaying the impact on machine learning

results from the different predictive program.

22.   (Currently Amended) A system for machine learning results, the system comprising:

a predictive compiler module configured to generate a plurality of predictive

programs each comprising a plurality of learned functions;

a pre-compute module configured to predetermine, using ~~one or more~~ the predictive

programs, permutations of machine learning results for each of the ~~one or~~

~~more~~ predictive programs at predefined increments between minimum values

for machine learning parameters and maximum values for the machine

learning parameters;

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an input module configured to receive user input from ~~multiple~~ <u>one or more</u> users identifying <u>one or more</u> values for one or more of the machine learning parameters for <u>a first subset of</u> the ~~one or more~~ predictive programs<u>;</u>

<u>a collaboration module configured to determine, using the predetermined permutations of machine learning results, an impact on machine learning results from a different one of the predictive programs based on the one or more identified values for the one or more of the machine learning parameters for the first subset of the predictive programs</u>; and

a display module configured to display ~~one or more of the predetermined~~ <u>at least the impact on the</u> machine learning results to the ~~multiple~~ <u>one or more</u> users ~~based on the identified values~~<u>,</u>

<u>wherein the predictive compiler module, the pre-compute module, the input module, the collaboration module, and the display module comprise one or more of logic hardware and a non-transitory computer readable storage medium storing program code executable by a processor.</u>

23.   (Currently Amended) The system of claim 22, further comprising ~~a collaboration~~ <u>an update</u> module configured to <u>dynamically update the display of the at least the impact on the machine learning results, using the predetermined permutations of the machine learning results, in response to the one or more users identifying one or more different values for one or more of the machine learning parameters</u> ~~determine an impact on machine learning results from one of the predictive programs based on an identified value for a machine learning parameter for another of the predictive programs~~.

24.   (Currently Amended) The system of claim [[23]] <u>22</u>, wherein <u>the one or more users comprise multiple users, the one or more values comprise multiple values, and</u> the multiple users identify the <u>multiple</u> values for different predictive programs of <u>the first subset of</u> the predictive programs.

25.   (Original) The system of claim 24, wherein the display module is configured to display the impact on the machine learning results on a shared display for the multiple users and to display the machine learning results for the different predictive programs on different displays for the multiple users.

26.   (Currently Amended) The system of claim [[22]] <u>24</u>, wherein the input module is configured to receive the user input from one or more of:

    separate client devices for the multiple users over a data network; and

    a shared interface for the multiple users on a single device.